ARJUNA JEE 2023

Mole Concept

DPP-11

1. How many grams of solute should be added in 100 g water to get a solution of density 1.2 g/ml and strength 5% (w/v)?

(1) 5g (2) 6 g
(3) 4.17 g (4) 4.35 g

2. A quantity of 10 g of acetic acid is dissolved in 100 g of each of the following solvents. In which solvent, the mole fraction of solute is maximum? Assume no any dissociation or association of acetic acid in the solvent.

(1) Water
(2) Ethanol
(3) Benzene
(4) Same in all solvents

3. For the reaction $2P + Q \rightarrow R$, 8 mol of P and 5 mol of Q will produce :

(1) 8 mol of R (2) 5 mol of R
(3) 4 mol of R (4) 13 mol of R

4. The number of moles of C and D produced on mixing 5 moles of A and 7 moles of B are respectively:

$(3A + 5B \rightarrow 7C + 9D)$

(1) 9 moles and 11 moles
(2) 11.66 moles and 15 moles
(3) 9.8 moles and 12.6 moles
(4) 1 moles and 13 moles

5. 4 g of hydrogen is ignited with 4 g of oxygen, the amount of water formed is?

(1) 2.5 g (2) 0.5 g
(3) 4.5 g (4) 8 g

6. 0.5 mole of H_2SO_4 is mixed with 0.2 mole of $Ca(OH)_2$. The maximum number of moles of $CaSO_4$ formed is:

(1) 0.2 (2) 0.5
(3) 0.4 (4) 1.5

7. For the reaction: $A + 2B \longrightarrow C$; 5 mole of A and 8 mole of B will produce:

(1) 5 mole of C (2) 4 mole of C
(3) 8 mole of C (4) 12 mole of C

8. Calculate the amount of H_2 which is left unreacted in the given reaction:

$2H_2 + O_2 \longrightarrow 2H_2O$

If 8 g of H_2 is mixed with 16 g O_2?

(1) 3 g (2) 6 g
(3) 1 g (4) 4 g

9. If 0.5 mol of $BaCl_2$ is mixed with 0.1 mole of Na_3PO_4, the maximum number of mole of $Ba_3(PO_4)_2$ that can be formed is:

(1) 0.7 (2) 0.05
(3) 0.30 (4) 0.10

10. Calculate the weight of FeO produced from 6.7 g VO & 4.8 g Fe_2O_3

$VO + Fe_2O_3 \longrightarrow FeO + V_2O_5$ (At. wt. of V = 51, At. wt. of Fe = 56)

(1) 4.32 (2) 7.755
(3) 2.585 (4) 0.0718

Answer Key

1.	(4)	6.	(1)
2.	(3)	7.	(2)
3.	(3)	8.	(2)
4.	(3)	9.	(2)
5.	(3)	10.	(1)

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